Clarke®

air

AIR IMPACT WRENCH

MODEL NO: CAT81

PART NO: 3110805

OPERATING & MAINTENANCE INSTRUCTIONS

CE

GC0614

INTRODUCTION

Thank you for purchasing this CLARKE Impact Wrench.

Please read all of the safety and operating instructions carefully before using this product. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service. The following safety symbols may be found on the tool.

	Read this instruction booklet carefully before use.		Wear ear protection.
	Wear eye protection.		

GUARANTEE

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase.

Please keep your receipt which will be required as proof of purchase. This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

GENERAL SAFETY RULES

CAUTION: FAILURE TO FOLLOW THESE PRECAUTIONS COULD RESULT IN PERSONAL INJURY, AND/OR DAMAGE TO PROPERTY.

WORK ENVIRONMENT

1. Keep the work area clean and tidy.
2. Dress appropriately - Do not wear loose clothing or jewellery. Tie long hair out of the way.
3. Keep children and visitors away - Do not let children handle the tool.
4. Do not operate the tool where there are flammable liquids or gases.

USE OF POWER TOOLS

1. Stay alert and use common sense - do not operate the tool when you are tired or under the influence of alcohol, drugs or medication.
2. Always wear eye protectors when using the tool. Eye protectors must provide protection from flying particles from the front and the side. Ear protectors should also be worn.
3. Do not overreach - Keep proper footing and balance at all times.
4. Never use oxygen, CO^2, combustible gases or any type of bottled gas as a source of power for this tool.
5. Do not connect the air supply hose with your finger on the trigger.
6. Do not exceed the maximum pressure for the tool of 90 psi / 6.2 bar.
7. Keep the air supply hose away from heat, oil and sharp edges.
8. Do not fit the tool to any stand or clamping device that may damage it.
9. Check hoses for leaks or worn condition before use, and ensure that all connections are secure.
10. Do not use the tool for any purpose than that described in this manual.
11. Do not carry out any alterations or modifications to the tool.
12. Always disconnect from the air supply when:
    - Performing any maintenance.
    - The tool is not in use.
    - The tool will be left unattended.

- Moving to another work area.
- Passing the tool to another person.

13. Never use the tool if it is defective or operating abnormally.
14. This tool should be serviced at regular intervals by qualified personnel.
15. Avoid damaging the tool by applying excessive force of any kind.
16. Always maintain the tool for the best and safest performance.
17. Quick change couplings should not be located at the tool. They add weight and could fail due to vibration.
18. Do not force or misuse the tool. It will do a better and safer job at the rate for which it was designed.
19. Do not remove any labels. Damaged labels should be replaced.
20. This tool vibrates with use. Vibration may be harmful to your hands or arms. Stop using the tool if discomfort, a tingling feeling or pain occurs. Seek medical advice before resuming use.

IMPACT WRENCH SAFETY INSTRUCTIONS

1. Always use the impact wrench in the manner and for the functions described in these instructions.
2. Always ensure the wrench is not moving and disconnected from the air supply when changing sockets etc. Use only Impact Wrench sockets....DO NOT use standard sockets.
3. Always finish tightening wheel nuts or engine parts with a torque wrench or suitable spanner to the correct torque as recommended by the vehicle manufacturer.
4. Always avoid excessive use of the impact wrench. When tightening a nut or bolt, never allow the wrench to impact more than 8 times - to avoid over tightening - 3 to 4 impacts is normally sufficient.
5. Always ensure that the socket is correctly installed before switching on.
6. Always only use sockets which are specified for impact wrench use.
7. Due to the possible presence of asbestos dust from brake linings, always wear suitable respiratory protection.
8. Never carry the impact wrench by the air supply hose.
9. Always disconnect from the air supply when changing impact sockets or when the wrench is not required for immediate use in order to avoid accidental starting.
10. Always store this product in a dry, secure place out of reach of children or untrained users.

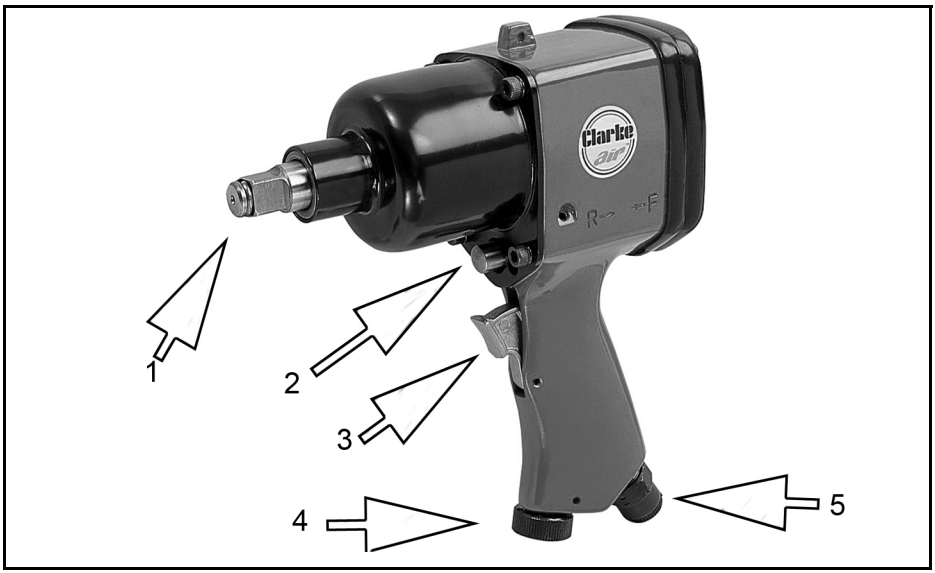
11. Always use both hands to control the impact wrench.
12. Always ensure the wrench has stopped before putting it down after use.

TRANSPORT & STORAGE

1. Never carry the tool by the air hose.
2. Never carry the tool with your finger on the trigger.
3. When not in use the tool must be disconnected from the air supply and stored in a dry place out of the reach of children (preferably in a locked cabinet).
4. Avoid storing the tool where the temperature is below 0°C.

Please keep these instructions in a safe place for future reference.

OVERVIEW

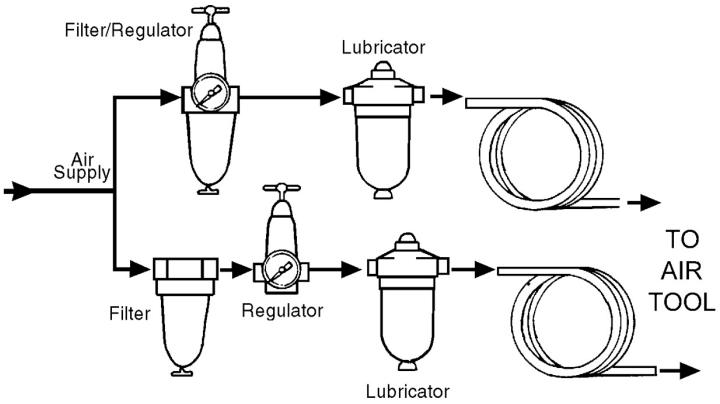


NO	DESCRIPTION	NO	DESCRIPTION
1	1/2" Square Drive Shaft	4	Speed Control Regulator
2	Forward/Reverse Selector	5	Air Inlet
3	Trigger		

COMPRESSED AIR REQUIREMENTS

WARNING: COMPRESSED AIR CAN BE DANGEROUS. ENSURE THAT YOU ARE FAMILIAR WITH ALL PRECAUTIONS RELATING TO THE USE OF COMPRESSORS AND COMPRESSED AIR SUPPLY.

- Use only clean, dry, regulated compressed air as a power source.
- Air compressors used with the tool must comply with the appropriate European Community Safety Directives.
- A build-up of moisture or oil in the air compressor will accelerate wear and corrosion in the tool. Ensure any moisture is drained from the compressor daily and the inlet filter is kept clean.
- If an unusually long air hose is required, (over 8 metres), the line pressure or the hose inside diameter may need to be increased.
- The air hose must be rated at least 150% of the maximum operating pressure of the tool.



- A typical air line layout is shown above. If an automatic in-line filter/ regulator is used, it will keep the tool in good condition, but should be regularly checked and topped up with oil. clarke airline oil should be used, and the lubricator adjusted to approx 2 drops per minute.
- For optimum performance it is recommended that a 3/8" ID hose is used.
- Never exceed the maximum operating pressure for the tool. It is recommended that air pressure to this tool does not exceed 90 psi at the tool when running. Higher pressures and dirty air will shorten the life of the tool due to faster wear and is a possible safety hazard.

BEFORE USE

WARNING: COMPRESSED AIR CAN BE DANGEROUS. ENSURE THAT YOU ARE FAMILIAR WITH ALL PRECAUTIONS RELATING TO THE USE OF AIR COMPRESSORS AND COMPRESSED AIR SUPPLY.

NOTE: Ensure the compressor is turned off.

1. If required, connect an in-line mini oiler to the tool.
   - A mini oiler helps to prolong the life of the impact wrench.
2. If a mini-oiler is not being used, run a few drops of oil through the tool before use. It can be entered through the air inlet connector or via the hose at the nearest connection to the air supply.
3. Connect a suitable airline hose.
4. Connect the other end of the hose to the compressor.
5. Turn on the air supply and check for air leaks. Rectify any found before proceeding.
   - PTFE tape may be useful for sealing threaded connections.

Your air tool is now ready for use.

You can fit a whip hose with a quick fit coupling if required, available from your Clarke dealer.

OPERATION

WARNING: WAIT UNTIL THE ANVIL HAS STOPPED ROTATING BEFORE OPERATING THE FORWARD/REVERSE BUTTON.

Forward/Reverse rotation is selected by pushing the Forward/Reverse regulator in the direction shown by the arrow on the side of the wrench.

For normal tightening, the wrench should be operated in the forward (F) direction. For loosening, the wrench should be operated in the reverse (R) direction.

FITTING THE IMPACT SOCKET

WARNING: NEVER USE STANDARD SOCKETS. THESE MAY SHATTER WITH SERIOUS CONSEQUENCES. ONLY USE IMPACT SOCKETS DESIGNED FOR USE WITH IMPACT TOOLS.

1. Select the impact socket you require, which must be in good condition and fit the tool exactly.
2. Push the socket onto the square drive.

OPERATING THE IMPACT WRENCH

1. Locate the socket over the nut to be tightened or loosened.
2. Squeeze the trigger to start the wrench.
3. Release the trigger switch to stop the wrench.
   - The square drive shaft will continue to rotate very briefly after the trigger has been released.

ADJUSTING THE POWER

1. To adjust the power, set the air regulator at the base of the tool.

DISCONNECTING THE AIR SUPPLY

1. Do not disconnect the air supply hose until the compressor has been shut down and the compressed air released.
2. Refer to the compressor instruction manual for the procedure to shut down and vent the compressed air.
3. Once the pressure has been released, disconnect the air supply hose from the air tool.

MAINTENANCE

WARNING: MAKE SURE THAT THE AIR TOOL IS DISCONNECTED FROM THE AIR SUPPLY BEFORE STARTING ANY CLEANING, OR MAINTENANCE PROCEDURES.

DAILY

1. Before use, drain water from the airline filter and compressor.
2. Pour a few drops of Clarke air-line oil, into the tool air inlet. This should be carried out regardless of whether or not an in-line mini oiler is used. If an in-line mini oiler is not used, this procedure should be repeated after every two to three hours of use.
3. Keep the body of the tool clean and free from debris.

WEEKLY

- Check the air inlet screen filter for blockage and clean if necessary.

CLEANING

1. Grit or gum deposits in the tool may reduce efficiency and cause the tool to run erratically. This condition can be corrected by cleaning the air strainer and flushing out the tool with gum solvent or oil.
2. Failing this, the tool should be disassembled, thoroughly cleaned, dried and reassembled.
3. The tool may be dismantled by removing the front cover using the hex key supplied prior to replacing any worn or damaged parts. You may prefer to take the tool to your Clarke dealer if internal maintenance is required.
4. While in a dismantled state, it may be desirable to grease the hammer mechanism and applying a small amount of good quality bearing grease.
   - This may be better left to your Clarke dealer.
   - A hex key is provided for removing the end cover from the wrench.

STORAGE

If the tool is to be stored, or is idle for longer than 24 hours, run a few drops of Clarke air line oil into the air inlet, and run the tool for 5 seconds in order to lubricate the internal parts.

- When not in use, disconnect from air supply, clean & store in a safe, dry place.

TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION
Tool runs at normal speed but slows down under any load.	1. Motor parts worn. 2. Worn or sticking mechanism due to lack of lubricant.	1. Return to Clarke dealer for repair. 2. Drip air tool lubricating oil into air inlet. Allow oil to soak moving parts before using.
Tool runs slowly. Air flows weakly from exhaust.	1. Motor parts jammed with gum/dirt. 2. Air-line regulator in closed position. 3. General airflow blocked by dirt.	1. Examine inlet air filter for blockage. Drip a few drops of air tool lubricating oil into air inlet. 2. Adjust in-line regulator to open position. 3. Operate tool in short bursts.
Tool will not run. Air flows freely from exhaust.	1. Motor vanes stuck due to buildup of foreign material.	1. Disconnect air supply and rotate tool assembly manually. 2. Try operating tool in short bursts. 3. Tap motor housing gently with a rubber mallet. 4. Drip a few drops of air tool lubricating oil into air inlet to soak moving parts.
Tool will not shut off.	1. Throttle O-rings damaged or ill-fitting in seat.	1. Return to Clarke dealer for repair.

PERFORMANCE

Please note that factors other than the tool may effect its operation and efficiency such as reduced compressor output, excessive drain on the airline, moisture or restrictions in the air-line, or the use of connectors of improper size or poor condition which will reduce air supply.

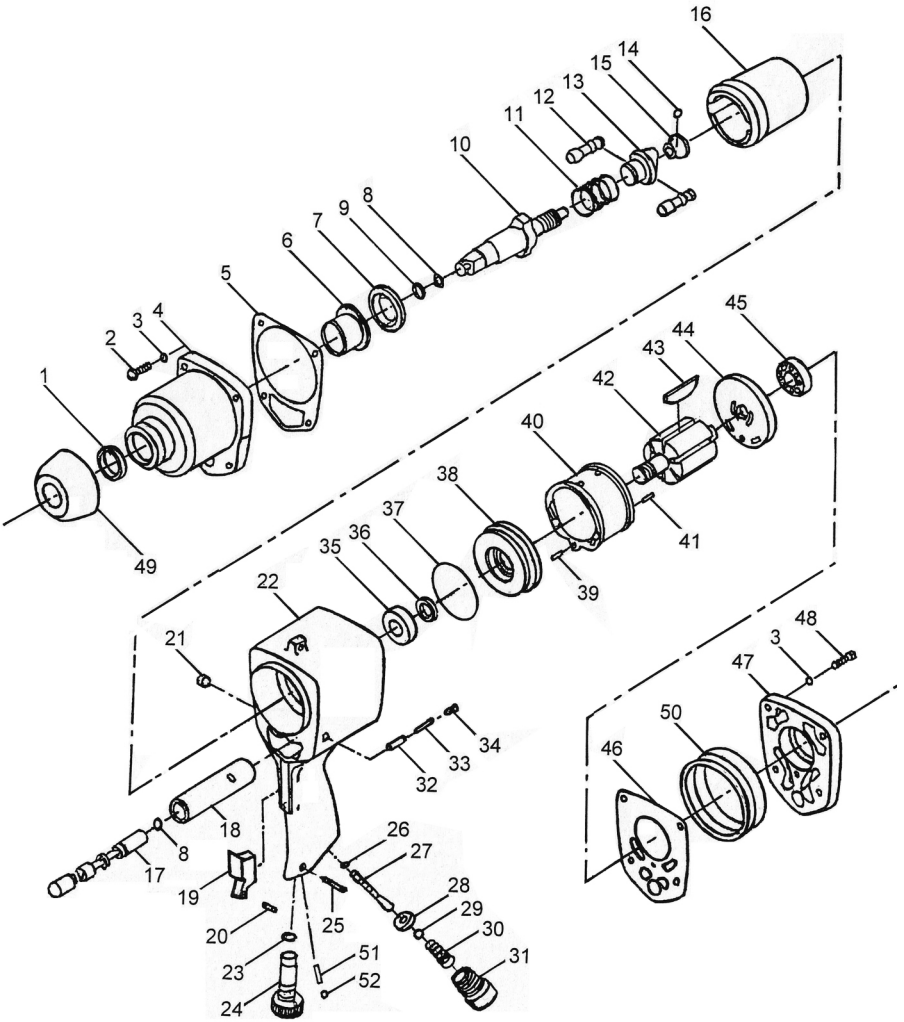
**Clarke Air Line Oil (part no. 3050825) is available from your Clarke dealer.

PARTS LIST

No	Description	Part No
1	Oil Seal	KL004202
2	Cap Screw	KL000117
3	Spring Washer	KL001802
4	Hammer Case	KL300010
5	Front Gasket	KL290008
6	Anvil Bush	KL302029
7	Spacer	KL302028
8	O-Ring	KL004103
9	Anvil Collar	KL2501040
10	Anvil	KL302003
11	Spring	KL300003
12	Hammer Pin	KL300005
13	Drive Cam	KL302004
14	Steel Ball	KL003807
15	Drive Cam Seat	KL302025
16	Hammer Cage	KL302005
17	Reverse Valve	KL290004
18	Valve Sleeve	KL290005
19	Trigger	KL290022
20	Spring Pin	KL003303
21	Set Screw	KL000604
22	Housing	KL290001
23	O-Ring	KL004122
24	Air Regulator	KL290007
25	Spring Pin	KL003302
26	O-Ring	KL004101

No	Description	Part No
27	Valve Stem	KL290010
28	Bushing	KL2501043
29	Steel Ball	KL003801
30	Spring	KL2501009
31	Hose Adaptor	KL2501010
32	Pin	KL2501032
33	Spring	KL2501031
34	Set Screw	KL000609
35	Ball Bearing	KL002306
36	Oil Seal	KL004201
37	O-Ring	KL004120
38	Front End Plate	KL290024
39	Spring Pin	KL003304
40	Cylinder	KL290021
41	Spring Pin	KL003308
42	Rotor	KL290019
43	Rotor Blade	KL290013
44	Rear End Plate	KL290023
45	Ball Bearing	KL002305
46	Rear Gasket	KL290006
47	Rear Cover	KL290003
48	Cap Screw	KL000107
49	Rubber Cap	KL290009
50	Rubber Ring	KL2501044
51	Spring	KL271012
52	Steel Ball	KL003802

PARTS DIAGRAM



ACCESSORIES

A wide range of airline accessories is available from your nearest CLARKE dealer, for further information, contact your nearest dealer, or telephone CLARKE International Sales department on 01992 565300.

Suitable air line accessories include Air Filter/Regulators, Lubricators, Hoses, Snap Couplings, clips, gauges, valves.

Suitable Impact Wrench compatible socket sets include the following:

3110437	CAT37B	11 piece 1/2"square drive(metric)
1800310	CIS12/17	17 piece 1/2"square drive(metric/AF)
1800305	CIS9/32	32 piece 3/8" & 1/2"square drive (metric/AF)
1800345	CIS12/7M	7 piece 1/2"square drive universal joint (metric)
1800350	CIS12/7MD	7 piece 1/2"square drive universal joint (deep) metric
1800355	CIS12/6	6 piece 1/2"square drive hex key set (metric)
1800360	CIS12/6S	7 piece 1/2"square drive TRX-Star

Parts & Service: 020 8988 7400 / E-mail: Parts@clarkeinternational.com or Service@clarkeinternational.com

SPECIFICATION

Model Number	CAT81
Weight	2.7 kg
Dimensions (L x W x H)	240 x 75 x 210 mm
Drive Size	1/2" sq (13mm)
Air Inlet Size	1/4"BSP
Min. Hose Size (ID)	8mm (5/16"BSP)
Max Operating Pressure	90 psi (6.2 bar)
Air Consumption	4.2 cfm
Max No Load Speed	7000 rpm @ 90psi
Max Torque	280 ft/lb
Max Bolt capacity	5/8"
Sound Pressure Level (LpA dB)	88.2 dB(A)
Sound Power Level (LwA dB)	101.2 dB(A)
Vibration emissions	<2.5m/s^2 (uncertainty value - 3.2m/s^2

Please note that the details and specifications contained herein are correct at the time of going to print. However Clarke International reserve the right to change specifications at any time without prior notice.

DECLARATION OF CONFORMITY

Clarke®
INTERNATIONAL

CERTIFICATE OF CONFORMITY

We declare that this product complies to the following standards/directives:

- **89/329/EEC**
- **EN 292-2**

Product Description: **1/2" IMPACT WRENCH**
Model Number: **CAT 81**
Serial (Batch) No:

Signed _____

Clarke INTERNATIONAL
Epping, Essex, CM16 4LG, England

A SELECTION FROM THE VAST RANGE OF

Clarke®

QUALITY PRODUCTS

AIR COMPRESSORS
From DIY to industrial, Plus air tools, spray guns and accesories.

GENERATORS
Prime duty or emergency standby for business, home and leisure.

POWER WASHERS
Hot and cold, electric and engine driven - we have what you need

WELDERS
Mig, Arc, Tig and Spot.
From DIY to auto/industrial.

METALWORKING
Drills, grinders and saws for DIY and professional use.

WOODWORKING
Saws, sanders, lathes, mortisers and dust extraction.

HYDRAULICS
Cranes, body repair kits, transmission jacks for all types of workshop use.

WATER PUMPS
Submersible, electric and engine driven for DIY, agriculture and industry.

POWER TOOLS
Angle grinders, cordless drill sets, saws and sanders.

STARTERS/CHARGERS
All sizes for car and commercial use.

PARTS & SERVICE: 020 8988 7400
E-mail: Parts@clarkeinternational.com or Service@clarkeinternational.com
SALES: UK 01992 565333 or Export 00 44 (0)1992 565335
Clarke® INTERNATIONAL Hemnall Street, Epping, Essex CM16 4LG
www.clarkeinternational.com